Amendments to the Claims:

       This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

       1. (Currently Amended) A method for communicating data within measurement traffic, the method comprising:

       sending a plurality of one or more measurement packets over a plurality of one or more paths, <u>each of the first plurality of one or more measurement packets having a common source and destination IP address,</u> each of the plurality of one or more paths traversing at least a portion of an internetwork, and each of the plurality of one or more measurement packets including:

       information for a receiver of the measurement packet to compute measurements of performance characteristics of at least a portion of the path of the measurement packet, and data including control data <u>comprising instructions that direct</u> ~~directing~~ a receiver of the measurement packet to change one or more configuration parameters of the receiver, the data further including one or more of measurement statistics, a generic communication channel, and network information.

       2. (Original) The method of claim 1, wherein the measurements of performance characteristics include one-way measurements.

       3. (Currently Amended) The method of claim 1, wherein the data includes measurement statistics<u> that include at least one of averages, deviations, and variances determined by analyzing at least two of the plurality of one or more measurement packets.</u>

       4. (Currently Amended) A method for communicating data within measurement traffic, the method comprising:

       receiving a plurality of one or more measurement packets over a plurality of one or more paths, <u>each of the plurality of one or more measurement packets being assigned a sequence number from a range of sequence numbers,</u> each of the plurality of one or more paths traversing at least a portion of an internetwork, and each of the plurality of one or more measurement packets including:

information for a receiver of the measurement packet to compute measurements of performance characteristics of at least a portion of the path of the measurement packet, the information including the assigned sequence number,

data including control data directing a receiver of the measurement packet to change one or more configuration parameters of the receiver, the data further including one or more of measurement statistics, a generic communication channel, network information.

5. (Original) The method of claim 4, wherein the measurements of performance characteristics include one-way measurements.

6. (Currently Amended) The method of claim 4, wherein the data includes measurement statistics calculated for a given path between a sender and the receiver.

7. (Original) The method of claim 4, further comprising analyzing of the measurement packet based on a dynamic algorithm, the dynamic algorithm computing computed statistics on one or more of the measurements of performance characteristics of at least a portion of the path of the measurement packet.

8. (Original) The method of claim 7, wherein a subset of the plurality of one or more paths is selected based at least in part on at least one of: one or more of the measurement statistics from the measurement packet and one or more of the computed statistics.

9. (Currently Amended) A method for communicating data within measurement traffic, the method comprising:

sending a first plurality of one or more measurement packets over a first plurality of one or more paths, each of the first plurality of one or more measurement packets having a common source and destination IP address, each of the first plurality of one or more paths traversing at least a portion of an internetwork, and each of the first plurality of one or more measurement packets including:

information for a receiver of the measurement packet to compute measurements of performance characteristics of at least a portion of the path of the measurement packet, the

performance characteristics including at least one of averages, deviations, and variances determined by analyzing at least two of the first plurality of one or more measurement packets,

data including control data directing a receiver of the measurement packet to change one or more configuration parameters of the receiver, the data further including one or more of measurement statistics, a generic communication channel, network information,

receiving a second plurality of one or more measurement packets over a second plurality of one or more paths, each of the second plurality of one or more paths traversing at least a portion of an internetwork, and each of the second plurality of one or more measurement packets including:

information for a receiver of the measurement packet to compute measurements of performance characteristics of at least a portion of the path of the measurement packet, and

data including control data directing a receiver of the measurement packet to change one or more configuration parameters of the receiver, the data further including one or more of measurement statistics, a generic communication channel, network information.

10. (Original) The method of claim 9, wherein the measurements of performance characteristics include one-way measurements.

11. (Original) The method of claim 9, wherein the data includes measurement statistics.

12. (Original) The method of claim 11, wherein the measurement statistics are at least partly responsive to jitter.

13. (Currently Amended) The method of claim 11, wherein the measurement statistics are at least partly responsive to path delay.

14. (Currently Amended) The method of claim 11, wherein the measurement statistics are at least partly responsive to loss deduced by identifying missing sequence numbers.

15. (Canceled)

16. (Original) The method of claim 9, wherein the data includes a generic communication channel.

17. (Original) The method of claim 9, wherein the data includes network information.

18. (Original) The method of claim 9, wherein the data is embedded in multiple measurement packets that are sent over multiple paths for improved communication performance, including redundancy and shorter transmission time.

19. (Original) The method of claim 9, wherein the measurement packets are at least one of encrypted and digitally signed.

20. (Original) The method of claim 9, wherein a clock referred to by a sender of the measurement packet and a clock referred to by the receiver of the measurement packet are synchronized the synchronization methods including at least one or more of GPS, NTP, IRIG, and NIST.

21. (Original) The method of claim 9, further comprising analyzing of the measurement packet based on a dynamic algorithm, the dynamic algorithm computing computed statistics on one or more of the measurements of performance characteristics of at least a portion of the path of the measurement packet.

22. (Original) The method of claim 21, wherein the algorithm computes averages of the measurements, including at least one of a moving average, an average based on the Robbins-Moro estimator, a window-based average, and a bucket-based average.

23. (Original) The method of claim 21, wherein the algorithm is at least partly specified through an external API.

24. (Original) The method of claim 21, wherein the computed statistics are at least partly recomputed upon the arrival of every measurement packet.

25. (Previously Presented) The method of claim 21, wherein the computed statistics are based at least partly on measurement statistics from the measurement packet.

26. (Original) The method of claim 21, wherein a subset of the plurality of one or more paths is selected based at least in part on at least one of: one or more of the measurement statistics from the measurement packet and one or more of the computed statistics.

27. (Original) The method of 26, wherein the selection of the subset of the plurality of one or more paths is based at least partly on the position of paths in a ranking.

28. (Original) The method of 27, wherein the ranking is at least partly based on one or more of the measurement statistics included as data in the measurement packet.

29. (Original) The method of 26, wherein the selection of the subset of the plurality of one or more paths is based at least partly on a probability associated with each path of the plurality of one or more paths.

30. (Original) The method of claim 29, wherein the probability of each path of the plurality of one or more paths is at least partly based on one or more of the measurement statistics included as data in the measurement packet.

31. (Previously Presented) The method of 26, wherein the selection of the subset of the plurality of one of more paths is based at least partly on applying one or more thresholds to at least one of the measurement statistics included as data in the measurement packet.

32. (Original) The method of claim 9, wherein measurement packets at least partly rely on UDP.

33. (Original) The method of claim 9, wherein at least one of the plurality of one or more paths is at least partly implemented with at least one of a GRE tunnel and an IPSEC tunnel.

34. (Original) The method of claim 9, wherein at least one of the plurality of one or more paths is at least partly implemented with at least one of a frame relay PVC, an ATM PVC, and MPLS.

35. (Previously Presented) The method of claim 9, wherein the internetwork is a plurality of one or more subnetworks, including at least one of a plurality of one or more VPNs; an overlay network; a plurality of one or more BGP autonomous systems; a plurality of one or more local area networks; a plurality of one or more metropolitan area networks; and a plurality of one or more wide area networks.

36. (Original) The method of claim 9, wherein the measurement packet sizes and times between measurement packets simulate the traffic pattern of a plurality of one or more applications.

37. (Previously Presented) The method of claim 36, wherein the plurality of one or more applications includes voice applications.

38. (Previously Presented) The method of claim 36, wherein the plurality of one or more applications includes video applications.

39. (Currently Amended) A networking system, comprising:

a plurality of one or more devices communicating at least a first plurality of one or more measurement packets over a first plurality of one or more paths, each of the plurality of one or more measurement packets being assigned a sequence number from a range of sequence numbers, each of the first plurality of one or more paths traversing at least a portion of an internetwork, and each of the first plurality of one or more measurement packets including:

information for a receiver of the measurement packet to compute measurements of performance characteristics of at least a portion of the path of the measurement packet, the performance characteristics including at least one of averages, deviations, and variances determined by analyzing at least two of the plurality of one or more measurement packets, and

data including control data directing a receiver of the measurement packet to change one or more configuration parameters of the receiver, the data further including one or more of measurement statistics, a generic communication channel, network information.

40. (Original) The networking system of claim 39, wherein the plurality of one or more devices includes a first sub-plurality of one or more devices, wherein the first sub-plurality of one or more devices sends one or more of the first plurality of one or more measurement packets.

41. (Previously Presented) The networking system of claim 40, wherein the plurality of one or more devices includes a second sub-plurality of one or more devices, wherein the second sub-plurality of one or more devices receives one or more of a second plurality of one or more measurement packets over a second plurality of one or more paths, each of the second plurality of one or more paths traversing at least a portion of the internetwork, each of the second plurality of one or more measurement packets including:

information for a receiver of the measurement packet to compute measurements of performance characteristics of at least a portion of the path of the measurement packet, and

data including one or more of measurement statistics, a generic communication channel, network information, and control data directing a receiver of the measurement packet to change one or more configuration parameters of the receiver.

42. (Original) The networking system of claim 41, wherein at least one of the first plurality of one or more measurement packets and at least one of the second plurality of one or more measurement packets are the same packet.

43. (Original) The networking system of claim 39, wherein at least one of the plurality of one or more devices receives one or more of the first plurality of one or more measurement packets.

44. (Previously Presented) The networking system of claim 39, wherein the plurality of one or more devices includes a first sub-plurality of one or more devices, wherein the first sub-plurality of one or more devices receives one or more of a second plurality of one or more

measurement packets over a second plurality of one or more paths and sends one or more of the first plurality of one or more measurement packets, each of the second plurality of one or more paths traversing at least a portion of the internetwork, each of the second plurality of one or more measurement packets including:

information for a receiver of the measurement packet to compute measurements of performance characteristics of at least a portion of the path of the measurement packet, and

data including one or more of measurement statistics, a generic communication channel, network information, and control data directing a receiver of the measurement packet to change one or more configuration parameters of the receiver.

45. (Original) The networking system of claim 44, wherein at least one of the first plurality of one or more measurement packets and at least one of the second plurality of one or more measurement packets are the same packet.

46. (Original) The networking system of claim 44, wherein the plurality of one or more devices includes a second sub-plurality of one or more devices, wherein the second sub-plurality of one or more devices sends one or more of the first plurality of one or more measurement packets.

47. (Original) The networking system of claim 46, wherein at least one of the first plurality of one or more measurement packets and at least one of the second plurality of one or more measurement packets are the same packet.

48. (Original) The networking system of claim 44, wherein the plurality of one or more devices includes a second sub-plurality of one or more devices, wherein the second sub-plurality of one or more devices receives one or more of the second plurality of one or more measurement packets.

49. (Original) The networking system of claim 48, wherein at least one of the first plurality of one or more measurement packets and at least one of the second plurality of one or more measurement packets are the same packet.

50. (Currently Amended) The method of claim 1, <u>further comprising:</u>

<u>determining a delay average for the plurality of one or more measurement packets by analyzing at least two packets from the plurality of one or more measurement packets;</u>

<u>determining a jitter average for the plurality of one or more measurement packets by analyzing at least two packets from the plurality of one or more measurement packets; and</u>

<u>combining the jitter average and delay average for the plurality of one or more measurement packets into a single value; and</u>

<u>including the single value in the data measurement statistics</u> ~~wherein the data comprise measurement statistics that include delay and jitter averages that are combined into a single value~~.

51. (Currently Amended) The method of claim 1, wherein <u>the receiver comprises a router, and wherein</u> the control data sent from the sender to the receiver ~~is configured to instruct~~ <u>instructs</u> the receiver to <u>perform at least one of the following:</u> ~~initiate sending one or more measurement packets, to~~ <u>(i)</u> change one or more of the measurement packet sizes, inter-measurement packet transmission times and mix of packet sizes~~, and to~~ <u>and (ii)</u> stop sending one or more of the plurality of measurement packets.

52. (Previously Presented) The method of claim 1, wherein the data comprises network information retrieved from network routers, wherein the network information comprises one or more of in-bound link utilization, out-bound link utilization, in-bound link bandwidth, out-bound link bandwidth, and CPU utilization.

53. (Previously Presented) The method of claim 9, wherein the sending and receiving are performed on a single device configured to change the one or more configuration parameters in response to receiving control data.

54. (Previously Presented) The method of claim 9, wherein the measurement statistics are at least partly responsive to jitter, delay, and loss.

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